

Notes for the conservation of the Rufous-fronted Laughingthrush *Garrulax rufifrons*

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The Rufous-fronted Laughingthrush *Garrulax rufifrons*, endemic to Java, has been recorded from a total of 15 montane sites, 14 in West Java (nominotypical *rufifrons*) and one in Central Java (subspecies *slamatensis*). It occupies montane forest generally in the range 1,000–2,000 m, although this may vary with site, and occurs in monospecific parties of birds but also in bird waves, and has or had an association with Javan Green Magpie *Cissa thalassina*. Breeding appears to be extended through the year, but lack of records in January–February and July–August may reflect real breaks in the cycle. A lack of recent records from bird markets and a recent hike in prices of captive birds supports other concerns that the Javan bird trade may have affected the species, which in the past 20 years appears only to have been observed at Gunung Gede-Pangrango. Surveys of known sites and of several montane forest reserves are needed before a heavy investment in captive breeding is made.

INTRODUCTION

Of all the species bearing the English name ‘laughingthrush’, now proposed as components of a large subfamily of babblers named Leothrichinae (Moyle *et al.* 2012), Rufous-fronted Laughingthrush *Garrulax rufifrons*—called Red-fronted in Andrew (1985) and MacKinnon (1988) and Plain-brown in Hellebrekers & Hoogerwerf (1967)—is the southernmost, being confined to the island of Java, Indonesia (Collar & Robson 2007). This fact, combined with its restriction to montane forest (Stattersfield *et al.* 1998), suggests a relictual distribution, and Berlioz (1930), in considering it ‘truly aberrant’, attributed this in part to its geographical isolation.

The species has received virtually no attention from biologists, ecologists and scientific ornithologists, and there are no studies of it in the wild, but because, by contrast, it has received considerable attention from bird trappers, it has been treated all this century as Near Threatened (Stattersfield & Capper 2000, BirdLife International 2001). Recent anecdotal evidence suggests that its conservation status may have declined further since the 1990s (Collar *et al.* 2012 and below). This paper is therefore an attempt to assemble basic information relevant to its long-term conservation and make some appropriate preliminary recommendations.

DISTRIBUTION

Mees (1996) listed and mapped 11 localities for the species (treating Gn [=Gunung] Endut and Gn Salak separately) and on this basis remarked that it ‘may be assumed to occur throughout the highlands of West Java’. Our further collation of records (initials of museums are glossed in the Acknowledgements) suggests that this prediction was correct. Since its description in 1831 the Rufous-fronted Laughingthrush has been recorded at the following localities (listed as far as possible from west to east), increasing the total to 15 (but treating Gn Endut as part of Gn Salak):

- **Gn Karang** above Ciomas and Ujungtebu, 1–13 April 1920 (Robinson & Kloss 1924: 285) and at an unspecified locality in April 1991 (D. A. Holmes *in litt.* 1991);
- **Gn Halimun**, August and September 1922 (2 specimens in Naturalis), July 1982 (K. D. Bishop *in litt.* 2013);
- **Gn Salak** (type locality designated by Deignan 1964), on the south-east slope, October 1882 (Vorderman 1886), at Gn Endut, 10 June 1897 (Bartels 1902, 1906, Mees 1996; 1 specimen in Naturalis), at Cianten, April–June 1932 (2 specimens in MZB), at Pasirreungit, 12–15 August 1981 (SvB),

at Warungloa, heard once, 15 July 1981 (SvB), on the south-west slope at Awibengkok, 10 records of 1–3 birds, 3–9 September 1988 (SvB);

- **Gn Gede–Pangrango**, May 1889 (1 specimen in Naturalis; Vorderman 1892), 1900–1926 (34 specimens and 3 clutches in Naturalis, 4 specimens in MZB), 1943–1947 (8 clutches in Naturalis, 2 specimens in MZB; also Hoogerwerf 1948), specifically at Puncak, 1970s (W. G. Harvey in a list supplied by the late D. A. Holmes to SvB), Telaga Warna, 1979–1981 (SvB), Cibodas, October 1896 (1 specimen in Naturalis) and 21 September 1918 (Spennemann 1923), Cibodas and Kandangbadak, February–March 1916 (Robinson & Kloss 1924, Delsman 1927) and April 1941 (1 clutch in Naturalis), with many encounters 1979–1989 (Andrew 1985, SvB) including one at Cimungkat, July 1987 (SvB), sight records through the 1990s and 2000s (J. Chance *in litt.* 1991, J. A. Eaton, C. R. Robson *in litt.* 2013) and audio recordings in June–July 2009 (XC30475–76 by B. Cox, XC40473–74 by D. Edwards);
- **Cianjur**, Cibeber, in the period 1946–1949 (G. F. Mees notebooks seen by SvB);
- **Gn Paruha**, Koleberes, 1927–1929 (Bartels 1931: 336; hence Hoogerwerf 1948);
- **Situ Lembang**, 15 March 1984, 8 birds (P. Andrew *in litt.* 2013);
- **Gn Tangkubanprahu** (Mees 1996), July and October 1926, December 1955 and December 1957 (8 specimens in Naturalis);
- **Gn Malabar** at Tirtasari, 12 May 1910 (Mees 1996; 1 specimen in Naturalis);
- **Gn Wajang**, Cibitung (Mees 1996), April and May 1910 (3 specimens in Naturalis);
- **Gn Papandayan**, late 1920s (Stresemann 1930), 1941–1942 (2 specimens in MZB), with subsequent records specifically at Kawahmanuk, 2 birds, 3 September 1987 (SvB); Gn Kendang, flock of 10–15 birds tape-recorded, 6 September 1987 (SvB);
- **Gn Rakutak**, March 1900 (1 specimen in AMNH);
- **Gn Guntur**, Garut, October 1900 (2 specimens in AMNH), including Kawah Kamojang, May 1923 (1 specimen in MZB), and ‘near Garut’ (Siebers 1929);
- **Gn Ciremay** (Mees 1996), June 1930 (1 specimen in Naturalis); and
- **Gn Slamet** (type and only locality for race *slamatensis*) at Kaligua, 1916–1917 (Siebers 1929; type specimen in Naturalis, 3 paratypes in MZB), and at Purwokerto, March 1925 (Voous 1948, Mees 1996; 2 specimens in Naturalis).

ELEVATIONS, ECOLOGY AND NATURAL HISTORY

The species is resident in and confined to 'mixed original forest' or 'broadleaved evergreen forest' at 900–2,500 m (Sody 1956, Collar & Robson 2007), this being a minor shift from elevations of 1,000–2,400 m (Stattersfield *et al.* 1998, BirdLife International 2001). However, these limits represent extremes amalgamated from individual sites, and may vary considerably at each known site depending on ecological conditions, mountain height (the peaks of several mountains listed above lie below 2,400 m), and levels of deforestation. Moreover, nothing is known about the species's relative abundance at different elevations, although Hoogerwerf (1950) indicated that on Gn Gede–Pangrango it was a common bird from Cibodas up to near the tops of the mountains.

The site-specific elevations in Hoogerwerf (1948)—1,500–2,600 m on Gn Papandayan, 600–1,000 m at Ciomas on Gn Karang, 800–1,200 m at Cimungkat on Gn Gede, 600–1,000 m at Koleberes on Gn Patuha and 500–2,300 m on Gn Salak—are not intended to indicate the limits between which the species was certainly encountered; nor is there clear evidence to support Hoogerwerf's (1948) characterisation of the species as one 'in certain areas probably living permanently between 2500 and (above) 3000 m'. On Gns Endut and Pangrango, Bartels (1902) gave its elevation as '3,000–3,500 feet' (900–1,100 m), later changing this to '3,000–6,000 feet' (900–1,800 m) (Bartels 1906); records from Cimungkat on Gn Gede were at 1,200 m (SvB). Some specimens on Gn Tangkubanprahu were at 1,500 m (Naturalis label data), as was the first record from Gn Papandayan (Stresemann 1930), although subsequently birds were found in the latter locality at 1,900 m (Kawahmanuk) and at 2,525 m (Gn Kendang) (SvB). Records from Gn Salak are at 1,500 m (Vorderman 1886), and specifically at Pasirreungit at 1,350–1,900 m and Awibengkok at 1,000–1,150 m (SvB). It therefore appears that only one record, hitherto unpublished, pins the species to an elevation higher than 2,000 m; all other records traced come from below this altitude. The record from Situ Lembang was at 850 m (P. Andrew *in litt.* 2013), and those on Gn Karang were at 600–900 m (Robinson & Kloss 1924), these apparently being the lowest elevations recorded for the species.

The Rufous-fronted Laughingthrush occupies all strata of the forest but chiefly the undergrowth, and is 'very agile' (Hoogerwerf 1950). It occurs in loose, sometimes large monospecific groups but also participates in bird-waves (Hoogerwerf 1950, Andrew 1985), these latter sometimes comprising up to 15 different species on Gn Gede (van Balen 1992); in particular, it associates with the Javan Green Magpie *Cissa thalassina* (Koningsberger 1901, Bartels 1915–1931), such that on Gn Halimun in 1982 the two species were found together in a bundle of birds being carried by a poacher (K. D. Bishop *in litt.* 2013). Its presence is best determined by its noisy, whinnying call, earning it the local name 'horsebird' (van Balen 1992) and placing it with the group of laughingthrushes that possess a laughing call (Collar & Robson 2007). Various authors have given glancing accounts of the diet: 'berries and insects, mostly beetles' (MacKinnon 1988), beetles, snails and fruits of *Melastoma malabathricum* (Sody 1989), and these plus mantids and caterpillars (Collar & Robson 2007). Hoogerwerf's (1950) mention of small hard seeds and Sody's (1989) of *Melastoma* may well both refer back to Vorderman's (1886) account of stomachs 'coloured black by fruit pulp, and filled with small hard seeds' (our translation). The closest observer of the species described its diet as mainly and sometimes exclusively various forest fruits, supplemented with insects, mainly beetles including weevils, plus bugs, caterpillars, locusts, spiders, ants and small vertebrates such as frogs and lizards (Bartels 1915–1931; also Delsman 1927). Specimen labels in Naturalis mention *Anomala* beetles, small beetles, a large weevil, a phasmid, looper caterpillars and *Ficus* and *Lantana* fruit as stomach

contents. In captivity, birds caught wild mice in their enclosure (Pithart 2009).

The nest is a sturdy, relatively small cup placed on a horizontal branch or in a fork usually fairly close (about 2 m) to the ground in smaller trees at the edge of forest (more details in Hoogerwerf 1950, Hellebrekers & Hoogerwerf 1967). The usual clutch is three (blue-green) eggs, but sometimes two; nests have been found in March, April, May, June, September, November and December (Hoogerwerf 1949, 1950, Hellebrekers & Hoogerwerf 1967). Whether the gaps in breeding in January–February and July–August represent real seasonal differences, random variation or temporal patchiness in observer coverage is an open question. However, breeding in Prague Zoo followed a roughly similar schedule, with nests in April–June and August–October (Pithart 2009). Naturalis possesses birds marked as juveniles from January (1), May (2), June (1) and August (1), but these are full size and it is impossible to pin them to a likely month of birth; it also contains four specimens labelled as having full-sized gonads in April (male and female) and May (two males). In captivity the female was noted to do almost all incubation, which lasted 14–15 days, while the nestling period was 15–16 days; moult occurred slowly from autumn (occasionally July) through to December (Pithart 2009). Indeed, birds at the end and start of the year have been described as 'gut im Gefieder' (Bartels 1902), which presumably best translates as 'in fresh plumage'.

POPULATION TRENDS AND THREATS

There has been no systematic monitoring of populations of this or any other forest bird species in Java, so a quantitative assessment of population trends is impossible. However, various items of qualitative information have accumulated to suggest that the Rufous-fronted Laughingthrush may now be in a more serious condition than has hitherto been realised, largely as a result of the singular Javanese tradition of bird keeping.

'I am afraid that aviculture is a major source of bird destruction in Indonesia', wrote Morrison (1980), having found Java to be 'a singularly birdless island'. This was over 30 years ago. At that time, however, the Rufous-fronted Laughingthrush, being a bird of high, remote forests, may still have been common. On Gn Gede–Pangrango it was common in the 1940s (Hoogerwerf 1950) and in the 1980s (Andrew 1985), and there is no reason to imagine that it was less common at the other localities listed above in the 1980s, although as a Javan endemic it was protected under Indonesian law in 1979 (Noerdjito & Maryanto 2001). Only once in the early documentation was there an indication of relative rarity: it was scarce at Gn Patuha in the years 1927–1929 (Bartels 1931), presumably for natural reasons ('only in the northern forests'). Extrapolation from experience at Gn Gede presumably lies behind MacKinnon's (1988) general description of the species as 'Locally not uncommon in montane forests' and behind Mees's (1996) remark that 'Where this species occurs it is common, noisy, and conspicuous'.

Nevertheless, only two years after this comment, the species was said to be 'fairly heavily exploited as a cagebird, which has rendered it uncommon in otherwise moderately secure habitat' (D. A. Holmes *in litt.* 1998 in BirdLife International 2001), leading to its designation as a Near Threatened species, and in the mid-2000s it was described as 'formerly common in Gede–Pangrango National Park... but now rare along main trail, reportedly owing to trapping' (Collar & Robson 2007), although inquiries of leaders taking bird tours to Gn Gede do not suggest that numbers have obviously declined there (C. R. Robson *in litt.* 2013, J. A. Eaton *in litt.* 2013).

Other evidence, however, certainly tends to support the notion that a real decline has been occurring for some years. Bird dealers

in markets in Medan, Sumatra, recently reported that Rufous-fronted Laughingthrush is 'becoming increasingly rare or difficult to find in economically viable numbers' (Shepherd 2011). Independently, it has been reported to have 'vanished from the bird markets in Sumatra' (P. Hospodárský in Pithart 2009). Moreover, on Java at the start of the century the species 'could be found in bird markets as a cheap local songster, selling for Rp 150,000 (\$16)', but in the past few years the price has increased tenfold and in 2012 no birds could be found in bird markets (R. Sözer in Collar *et al.* 2012 and *in litt.* 2013). This latter testimony was independently supported by C. R. Shepherd (*in litt.* 2013):

Dealers in the Barito Market and the Pramuka Market [Jakarta, Java] stated in 2011 that this species was 'difficult to find, or all gone' (*susah* or *sudah habis*). These kinds of statements do usually mean trappers are rarely bringing them in and are not finding them in their usual trapping areas. In 2012, I only carried out one survey in Jakarta's three largest bird markets (June 2012) and did not see any.

Moreover, there are parallels with declines and near-disappearances in other species that have been attributed to the demands of Javan bird-keeping, most notably that of the Javan Green Magpie (van Balen *et al.* 2013; also Collar *et al.* 2012).

However, the current plight of the magpie, and the laughingthrush's reported association with it, opens up the plausible if very remote possibility that the laughingthrush's conservation status may not be so desperate. Since the magpie is a much more prized species in the Javan bird trade, it might conceivably be that when targeting the magpie trappers took many laughingthrushes simply as a 'bycatch', which could explain the latter's low prices and wide availability a few years ago. Moreover, now that trade has reduced the numbers of magpies to near-zero (van Balen *et al.* 2013), trappers are perhaps no longer visiting areas where magpies once occurred, in which case the sudden disappearance of laughingthrushes from markets might simply reflect lack of trapping effort rather than lack of birds. Nevertheless, the rather high prices now commanded by the laughingthrush tend to suggest that its rarity is real and, as V. Nijman (*in litt.* 2013) has commented, there are high numbers of montane bird species still available for sale in Java's markets, and 'not all of them are expensive'.

CONSERVATION NEEDS

If protected area status improves the chances of long-term habitat conservation, then Gn Halimun–Salak, Gn Gede–Pangrango and perhaps Gn Guntur are likely to be the best-preserved of the sites at which the laughingthrush occurs (although at Gn Gede in the past 10 years there has been 'shocking clearance' for vegetable plots, 'apparently inside the protected area, probably up to 2,100 m in a c.1 km belt above and east of the Cibodas Botanic Garden': F. R. Lambert *in litt.* 2013). The reserve at Kawah Kamojan on Gn Guntur covers 8,000 ha at 1,400–2,250 m (MacKinnon *et al.* 1982), but other sites at which the species has been recorded have very small areas protected: the only reserves larger than 100 ha are at Telaga Patengan on Gn Patuha (150 ha), Gn Papandayan (844 ha) and Gn Tangkubanprahu (1,660 ha) (MacKinnon *et al.* 1982), but it is not known if they encompass laughingthrush habitat and viable populations. An area of 15,000 ha on Gn Slamant was long ago recommended for protection (see Stattersfield *et al.* 1998) but only two reserves, both less than 20 ha, exist there (MacKinnon *et al.* 1982); since it is the sole locality for the highly distinctive subspecies *slamatensis* (Siebers 1929, Voous 1948, Mees 1996) of *Garrulax rufifrons*, formal protection of the site is clearly highly desirable.

Last records of the species from all known sites are: Gn Karang 1991, Gn Halimun 1984, Gn Salak (where on Endut it was 'not

rare' at the start of the twentieth century: Bartels 1902, 1906) 1988, Gn Gede–Pangrango 2012, Cianjur at least 1949, Gn Patuha before 1931, Situ Lembang 1984, Gn Tangkubanprahu 1957, Gn Malabar 1910, Gn Wajang 1910, Gn Papandayan 1987, Gn Rakutak 1900, Gn Guntur 1923, Gn Ciremay 1930 and Gn Slamant 1925. D. Liley (*in litt.* 2013) spent 5–6 weeks at Cikuya, on the southern slopes of Gn Halimun, mostly at 1,000–1,200 m, without seeing the species, and K. D. Bishop (*in litt.* 2013) visited Gn Halimun in August 2011 after a gap of 29 years and found no laughingthrushes; however, it is fair to note that the one location that most birdwatchers go to at Gn Halimun, Cikaniki, probably never had the species (between 1996 and 2009 field teams never recorded it: Prawiradilaga *et al.* 2003, Noske *et al.* 2011). Even so, it appears to be at least 20 years since there was a record of the species away from Gn Gede–Pangrango.

Naturally, therefore, these sites need urgent surveying to determine the status of the forests and the continuing presence of the species (for which, given its noisiness, playback techniques would probably be highly effective). Other under-explored reserves which might hold the species are: Gn Burangrang (2,700 ha; 1,000–2,000 m); Gn Tampomas (1,250 ha; 1,000–1,700 m); Gn Sawal (5,400 ha; 600–1,764 m); Gn Simpang (15,000 ha; 600–1,600 m) and Gn Tilu (8,000 ha; 1,200–2,177 m). Preferably, however, such a survey would involve line-transect or point-count work to establish baseline densities at the sites, and would target other rare species such as Javan Hawk Eagle *Nisaetus bartelsi*, Javan Trogon *Apalharpactes reinwardtii*, Javan Cochoa *Cochoa azurea* and Javan Green Magpie, along with (e.g.) certain primates.

Study of the culture and economy of bird-keeping in Indonesia has led Jepson *et al.* (2011) to 'argue that, in Indonesia at least, conservationists need to move beyond the moralistic, animal rights and protectionist logic that dominate [*sic*] much wildlife trade discourse and embrace the development logic of pro-poor growth and more, better jobs'. Whatever one makes of this prescription it predicates a time-scale that completely mismatches the short-term needs of many species native to Java, and if acted on would merely vaporise their chances of survival. If conservationists do not focus on birds that are at greatest risk from trade activities on the island, the only logic they are likely to embrace is the logic of extinction.

Captive breeding for conservation purposes ('conservation breeding') may therefore now be a lifeline for the Rufous-fronted Laughingthrush (Collar *et al.* 2012). However, the species has been bred only with some difficulty and only, apparently, in two European institutions, Tierpark Berlin (Kaiser 2006) and Prague Zoo (Pithart 2009). It has proved an aggressive and problematic species to keep, and endeavours to develop a significant captive stock may only be worth making once the evidence is clearer about its status in the wild.

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